2020 IEEE INTERNATIONAL WORKSHOP ON

Metrology for AeroSpace

PISA, ITALY / 22-24 JUNE, 2020

CALL for PAPERS

for the special session on

METROLOGY IN THE RESEARCH OF THE HELICOPTERS AND DRONES

TOPICS

1. Metrology in aerodynamics
2. Construction and measurements of the aircraft systems
3. Avionics and sensors in rotorcraft
4. Metrological aspects of the engines and propulsion systems
5. Measurements and operational tests of helicopters and drones

ABOUT THE CONVENERS

Dr **Zbigniew Czyż** is a staff member of the Aeronautics Faculty at the Polish Air Force University (science 2018) where he holds the position of lecturer and of the Faculty of Mechanical Engineering at the Lublin University of Technology (since 2013) where he works as a scientist in research projects. He graduated with a specialization in the construction and exploitation of aircraft propulsion systems. He is the author of 46 reviewed papers and scientific publications, editor of 11 monographs and author of 10 chapters of monograph. He co-authored 4 patents and 16 patent applications. Two of them were awarded by international organizations, e.g. gold medal at the International Exhibition of Inventions in Geneva in 2016, gold medal at the 10th International Warsaw Exhibition of Inventions IWIS 2016, special award from the First Institute of Researchers and Inventors (Iran) at the 44th International Exhibition of Inventions "Geneva Inventions", gold medal granted by the Chinese Innovation & Invention Society (Taiwan) and silver medal granted by Association of Polish Inventors and Rationalisers during the International Warsaw Inventions Exhibition – IWIS 2013. A supervisor or auxiliary supervisor of engineering diplomas and master theses. He is the author of various expert opinions concerning innovations for industry. He holds certificates related to the CAD and CAE software. He is also a member of scientific committees and scientific conference organizing committees (International Conference of Computational Methods in Engineering Science). He is also a reviewer for scientific journals (Advances in Science and Technology Research Journal, Transactions of the Institute of Aviation, Journal of Technology and Exploitation in Mechanical Engineering). Worker in many projects in the field of aviation propulsion systems and fluid mechanics. His main area of research involves computational fluid dynamics, heat transfer and aerodynamics. The research is aimed at the practical application and cooperation between science and enterprises.

Prof. **Jerzy Józwik** is a staff member of the Faculty of Mechanical Engineering at the Lublin University of Technology (since 1998) and of the State School of Higher Education in Chełm (since 2007), where he holds the positions of Deputy Director of the Institute of Technical Studies and Aviation and Head of the Engineering Studies Centre (since 2012). He is a member of numerous scientific societies, including the Lublin Scientific Society, the Polish Society of Engineers and Mechanics, the Polish Society of Production Management, and the Polish Welding Society, where, since 2015, he has held the position of Chairman of the Scientific and Technical Section of the Polish Welding Society, Lublin Branch. In 2018 he was honoured with the Silver Cross of Merit and in 2011 Bronze Cross of Merit from the President of the Republic of Poland. He graduated from the Faculty of Mechanical Engineering of the Lublin University of Technology in Mechanics and Machine Design with a specialization in Machine Technology and Polymer Processing. He is the author of over 160 reviewed papers and scientific publications, author of one monograph (2018) and co-author of two monographs (2014, 2016), the editor of one monograph (2009) and a co-editor of two monographs (2005, 2007). He co-authored two patents, two utility models and three patent applications. A supervisor of engineering diplomas and master theses as well as an auxiliary supervisor of doctoral dissertations. He is the author of various expert opinions concerning innovations for industry. He holds certificates related to the operation of machines and numerically controlled devices, CNC machine tools, robots, cutters, tool setting system operation, CNC machine tool diagnostic systems, microscopes, and optical tools utilized in reverse engineering and research.

ORGANIZED BY

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He is also a member of various scientific committees and scientific conference organizing committees, both domestically and internationally (Poland, Czech Republic, Slovakia, Ukraine, Romania, Croatia). He is also a member of scientific committees and a reviewer for scientific magazines as well as a reviewer and member of the jury in a national competition for Best Master Thesis organized by Sandvik Coromant in Poland. He is actively engaged in the Erasmus and Ceepus programmes both at the Lublin University of Technology and the State School of Higher Education in Chełm. He is the author of various expert opinions concerning innovations for industry.

Phd Eng. **Tomasz Łusiak** is a staff member of the Aeronautics Faculty at the Polish Air Force University (science 2015) where he holds the position of lecturer and of the Faculty of Mechanical Engineering at the Lublin University of Technology (since 2003) where he works as a adjuncts, scientist in research projects. He would like to pursue a further plan of research in the field of aerodynamic aircraft and the influence of aerodynamic interference on the properties of these objects. Analysis of the state of the art shows that there is an urgent need to assess the phenomenon of interference in the operation of windmills and helicopters. Innovative structural solutions are being designed, which must be subjected to numerical tests and experimental verification on models of these objects in wind tunnels.
The scientific interests concern special operations with the use of helicopters, windmills, especially in urban agglomerations, as well as agro-aircraft and tourist services. I have established cooperation with such services as PSP, Police Air Force, LPR, Lublin Airport, Technical Institute of Air Force in Warsaw, the Institute of Aviation in Warsaw and with the aviation industry, including with Agusta Westland PZL Świdnik S.A., LPU HELISECO.
The goal of my research is to carry out a numerical and computational - experimental analysis of the influence of disturbances in the rotational flux of the carrier rotor and propellers of propulsion engines on the resultant aerodynamic parameters of the aircraft which is a windmill. The aim is also to develop rational methods and optimization of innovative structural solutions of the fuselage and load-bearing elements generating aerodynamic stream during the flight, especially through its propulsion system.

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